

JLCA Corner: Report

Symposium: International Comparison of LCA Methodologies

Date: March 4th, 1999; Place: Tokai University Member's Club, Kasumigaseki, Tokyo, Japan

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Including Japan, the investigations for constructing LCA database and development of the assessment method for environmental loads or impacts have been performed in recent years. As a result of these activities, a lot of the methodologies for inventory analysis and impact assessment have been proposed. However, up to now, there is no methodology for LCA and the procedure of interpretation that has been agreed to internationally. It is quite important to clarify the characteristics between these approaches to facilitate interpretation and point out their strong and weak points. From these backgrounds, four institutions in Europe – (1) Product Engineering GmbH (PE), Dettingen, Germany/Institute for Polymer Testing and Polymer Science (IKP), University of Stuttgart, Germany, (2) Swiss Federal Laboratories for Materials Testing and Research (EMPA), (3) Leiden University Centre of Environmental Science (CML), The Netherlands, (4) PRé Consultants, Amersfoort, The Netherlands – as well as national institutes and organizations in Japan – National Institute for Environmental Studies (NIES), National Institute for Resources and Environment (NIRE) and Japan Environmental Management Association for Industry (JEMAI) – have assessed the same products (copy machine) respectively and compared their approaches internationally.

This symposium was held by JLCA (Life Cycle Assessment Society of Japan) to announce the results of these institutions. Purpose of the symposium: to discuss the future of LCA based on their results and to obtain a clue for development of LCA methodologies agreed upon internationally. More than 100 people related to LCA research participated.

ATSUSHI INABA (NIRE), proposer of this symposium, introduced the scope of the symposium: the difficulties of collecting data, the data quality, future directions to construct a national database, the limitation of impact assessment methodologies, a consideration both of time and geographical dependence and the treatment for weighting methodology.

KENJI ITO (JBMA) introduced the preliminary data for copy machines.

All of the investigations were carried out based on preliminary data (weight of composed material, the numbers of parts, input and output within the process of assembly, the information concerning transportation, usage and disposal and consumption in usage, etc.).

PE (Product Engineering) investigated the possibilities of performing an LCI with a system model.

MATTHIAS FINKBEINER (PE) introduced the result of inventory analysis for copy machines including the inventory data concerned with the manufacturing parts and the end of life phases of their original system models. The number of inventory data items listed is more than 200 substances. Additionally, he presented the framework of the public LCA database.

PAUL W. GILGEN (EMPA) introduced screening LCI methodology with the result of copy machines by using the EcoPro database and showed the usefulness of screening LCI to identify the hot spots of a product system. He also compared EMPA and PE's results to clarify the limitations and benefits of their approaches.

GJALT HUPPES (CML) surveyed weighting methodologies and introduced the results of the inventory data provided by PE. He listed the demands for impact assessment such as completeness with respect to relevant interventions and effect chains, explicit choice for the model structure and assumptions, transparency in models, etc. MARK GOEDKOOP (PRé Consultants) presented the overview of the Eco-indicator '98 and applied it as a world premiere. Furthermore, he discussed whether this methodology fulfills the requirements of the ISO 14042 standard and compared the results by Ecoindicator '95.

YUICHI MORIGUCHI (NIES) showed the important points where subjectivity will be included for a development of the weighting approach across the different impact categories. He described typical models which should determine the importance of impact categories.

YASUNARI MATSUNO (NIRE) explained the importance of considering the emission site and type of emission source in impact assessment with many examples showing environmental impacts are fairly dependant on the geographical site.

NORIHIRO ITSUBO (JEMAI) proposed a methodology to assess total impacts in Japan and applied it to inventory data provided by PE and EMPA. This method is composed of the estimation of impacts related to input and output, and makes a comparison between these estimated damages. This approach will be discussed at a later stage.

After these presentations, panel discussions were held progressed by ATSUSHI INABA. A lot of demands and difficulties for LCA were discussed by panelists and audiences. All contributions were of good quality and provided good results for interesting discussions.

Announcement: A Big Event

Large-scale exhibition, symposium and opportunities for communication to make environmentally-conscious products a successful business

Sponsored by JEMAI

Location: Tokyo Big-Site

Date: December 10-12, 1999

Contact: Tel.: +81-3-3832-7085 (Fax: -2774)

Target groups: stake holders in development, production, distribution, purchasing, consumption

Events (among others):

- Eco-products gallery
- Eco-products information booth
- Case study of environmentally-friendly goods production
- Environment NGO exhibitin booth
- Green purchase symposium
- Seminars by experts